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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,677	07/28/2003	Scott D. Briles	S-100,588	4503

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EXAMINER	
LEE, SIU M	

ART UNIT	PAPER NUMBER
2611	

MAIL DATE	DELIVERY MODE
02/02/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/628,677	BRILES, SCOTT D.	
	Examiner	Art Unit	
	SIU M. LEE	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 October 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4 and 6-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4 and 6-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/19/2009 has been entered.

Claim Objections

2. Claims 7 and 8 are objected to because of the following informalities:

Claim 7 and 8 recite a step of "converting data bit stream to bipolar states of +1s and -1s, the examiner suggest to change lines 8-9 of claim 7 and lines 10-11 of claim 8 from "the antenna has a high impedance in the event a 1 is to be sent a low impedance in the event a 0 is to be sent" to --- the antenna has a high impedance in the event a 1 is to be sent a low impedance in the event a -1 is to be sent---.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 2, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neagley et al. (US 2002/0128052 A1, hereinafter Neagley) in view of NPL (Potentials, IEEE Volume 18, Issue 4, Oct-Nov 1999, pages 29-33).

(1) Regarding claim 1:

Neagley discloses a method comprising:

generating a data bit stream (digital input 18in figure 1, paragraph 0040);

coding said data bit stream to increase its bit rate (provide the digital input signal 18 to voltage controlled squarewave oscillator 16, paragraph 0040);

providing said modified phase modulated reflectance data bit stream to a switch (impedance switch 14 in figure 1) that selectively connects an antenna to at least one power splitter, wherein the at least one power splitter selectively connects at least one matched load to the antenna, and wherein the matched load is also connected to the ground (the impedance switch 14 can generate an impedance for open circuit or a matched load and connected to the antenna ground as shown in figure 1 (paragraph 0041), therefore, when the impedance switch is with an open circuit, the antenna reflect all of the received radio frequency signal (all energy re-radiated) and when the impedance is a matched load connected to the antenna ground (ANT GND), no energy is re-radiated from the antenna 10 because the received RF signal energy is split between the impedance of the antenna and the matched load, therefore, it provide a power

splitting function; as a result, the impedance switch provide the function of selective connects an antenna to at least one power splitter, wherein the at least one power splitter selectively connects at least one matched load to the antenna, and wherein the matched load is also connected to the ground).

Neagley fails to disclose when the antenna has a high impedance in the event a "1" is to be sent a low impedance in the event a "0" is to be sent.

However, NPL discloses connects an antenna to an infinite impedance in the event a "1" is to be sent (maximum reflection), or connects said antenna to ground in the event a "0" is to be sent (maximum absorption) (page 31, column 3, lines 51-60).

It is desirable to connects an antenna to an infinite impedance in the event a "1" is to be sent, or connects said antenna to ground in the event a "0" is to be sent as taught by the NPL because it will maximize the signal to noise ratio. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the method of the NPL in the system of Ingram to improve the SNR ratio.

(2) Regarding claim 2:

Neagley discloses a single impedance switch, therefore, said at least one power splitter is one power splitter.

(3) Regarding claim 4:

Neagley discloses an apparatus comprising:

a modulated reflectance unit generating a phase-modulated data bit stream at a pre-selected rate (digital input 18 in figure 1 comprises microphone

28, analog to digital converter 30, and speech compression electronics 32, and error control coding 34 as shown in figure 2; as it is an digital signal, it is of a pre-selected rate);

a coder receiving a data bit stream for having a pre-selected rate wherein said code modifies said data bit stream by increasing said pre-selected rate (voltage controlled squarewave oscillator 16 an intermediate frequency that switched sufficiently rapidly for the input-data rate, paragraph 0040); and

a switch (impedance switch 14 in figure 1) receiving said data bit stream (impedance switch 14 receives the output of the voltage controlled squarewave oscillator 16 as shown in figure 1) and connecting an antenna to at least one power splitter, wherein the at least one power splitter selectively connects at least one matched load to the antenna, and wherein the matched load is also connected to the ground (the impedance switch 14 can generate an impedance for open circuit or a matched load and connected to the antenna ground as shown in figure 1 (paragraph 0041), therefore, when the impedance switch is with an open circuit, the antenna reflect all of the received radio frequency signal (all energy re-radiated) and when the impedance is a matched load connected to the antenna ground (ANT GND), no energy is re-radiated from the antenna 10 because the received RF signal energy is split between the impedance of the antenna and the matched load, therefore, it provide a power splitting function; as a result, the impedance switch provide the function of selective connects an antenna to at least one power splitter, wherein the at least one power splitter

selectively connects at least one matched load to the antenna, and wherein the matched load is also connected to the ground)

Neagley fails to disclose the antenna has a high impedance in the event a "1" is to be sent a low impedance in the event a "0" is to be sent.

However, NPL discloses connects an antenna to an infinite impedance in the event a "1" is to be sent (maximum reflection), or connects said antenna to ground in the event a "0" is to be sent (maximum absorption) (page 31, column 3, lines 51-60).

It is desirable to connects an antenna to an infinite impedance in the event a "1" is to be sent, or connects said antenna to ground in the event a "0" is to be sent as taught by the NPL because it will maximize the signal to noise ratio. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the method of the NPL in the system of Ingram to improve the SNR ratio.

(4) Regarding claim 6:

Neagley further discloses a single impedance switch, therefore, said at least one power splitter is one power splitter.

5. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ingram (US 6,509,836 B1) in view of NPL (Potentials, IEEE Volume 18, Issue 4, Oct-Nov 1999, pages 29-33), Lewinter (US 4,499,594) and Neagley et al. (US 2002/0128052 A1, hereinafter Neagley).

(1) Regarding claim 7:

Ingram discloses a method comprising:

generating data bit stream (information wave form 91 in figure 2B);

generating square waves (periodic square wave 90 is being generated as shown in figure 2B);

multiplying said square waves with said data bit stream (the multiplier in figure 2B multiplies the information wave form 91 and square wave 90 to form impedance control signal 89 as shown in figure 2B)

providing said modified coded data bit stream to a switch (switch 110 in figure 2A) that connects an antenna (tag antenna 88 in figure 2A) to an open stage in the event a "1" is to be sent, or connects said antenna to an close stage in the event a "0" is to be sent (open and close stage according to an impedance control signal 89, open is being interpreted as an indefinite impedance and open is being interpreted as short to the ground) (column 1, lines 56-65).

Ingram fails to disclose (a) converting data bit stream to bipolar states of "+ls" and "-ls" before multiplying with the square wave; (b) the antenna has a high impedance in the event a "1" is to be sent a low impedance in the event a "0" is to be sent; and (c) a switch receiving said multiplication for connecting an antenna to at least one power splitter, wherein the at least one power splitter selectively connects at least one matched load to the antenna, and wherein the matched load is also connected to the ground.

With respect to (a), Lewinter discloses a digital to analog convert that can convert a binary data stream to bipolar states of “+1s” and “-1s” (figure 2, column 2, lines 11-14).

It is desirable to convert a binary data stream to bipolar states of “+1s” and “-1s” because it reduces the potential for error (column 3, lines 9-11). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Lewinter in the system of Ingram and NPL to improve the accuracy of the system.

With respect to (b) NPL discloses connects an antenna to an infinite impedance in the event a "1" is to be sent (maximum reflection), or connects said antenna to ground in the event a "0" is to be sent (maximum absorption) (page 31, column 3, lines 51-60).

It is desirable to connects an antenna to an infinite impedance in the event a "1" is to be sent, or connects said antenna to ground in the event a "0" is to be sent as taught by the NPL because it will maximize the signal to noise ratio. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the method of the NPL in the system of Ingram to improve the SNR ratio.

With respect to (c), in the same field of endeavor, Neagley discloses an impedance switch 14 that receives signal from voltage controlled squarewave oscillator and generates an impedance for open circuit or a matched load and connected to the antenna ground as shown in figure 1 (paragraph 0041), therefore, when the impedance switch is with an open circuit, the antenna reflect all of the received radio frequency signal (all energy re-radiated) and when the impedance is a matched load connected to the antenna ground (ANT GND), no energy is re-radiated from the antenna 10 because the received RF signal

energy is split between the impedance of the antenna and the matched load, therefore, it provide a power splitting function; as a result, the impedance switch provide the function of selective connects an antenna to at least one power splitter, wherein the at least one power splitter selectively connects at least one matched load to the antenna, and wherein the matched load is also connected to the ground.

It is desirable to have a switch receiving said multiplication for connecting an antenna to at least one power splitter, wherein the at least one power splitter selectively connects at least one matched load to the antenna, and wherein the matched load is also connected to the ground because it provide a condition that no energy is re-radiated from the antenna and thus improve the integrity of the transmitted signal and reduce noise. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Neagley in the apparatus of Ingram, NPL and Lewinter to improve the integrity of the transmitted signal and reduce noise.

(2) Regarding claim 8:

Ingram discloses an apparatus comprising:

square wave generation means for outputting square waves (it is inherently that the periodic square wave 90 as shown in figure 2B is generated by a square wave generating means);

means for generating a phase-modulated reflectance data bit stream (the bit information waveform 91, since the information is in bits, therefore, it is either a one or a zero, thus represent a BPSK signal);

multiplication means for multiplying together said square waves and said bipolar (multiplier as shown in figure 2B multiplies the square wave and the information wave from); and

providing said modified coded data bit stream to a switch (switch 110 in figure 2A) that connects an antenna (tag antenna 88 in figure 2A) to an open stage in the event a "1" is to be sent, or connects said antenna to an close stage in the event a "0" is to be sent (open and close stage according to an impedance control signal 89, open is being interpreted as an indefinite impedance and open is being interpreted as short to the ground) (column 1, lines 56-65).

Ingram fails to disclose (a) the antenna has a high impedance in the event a "1" is to be sent a low impedance in the event a "0" is to be sent; (b) converter means for converting said data bit stream to bipolar states of "+1" and "-1;"; (c) a switch receiving said multiplication for connecting an antenna to at least one power splitter, wherein the at least one power splitter selectively connects at least one matched load to the antenna, and wherein the matched load is also connected to the ground.

With respect to (a) NPL discloses connects an antenna to an infinite impedance in the event a "1" is to be sent (maximum reflection), or connects said antenna to ground in the event a "0" is to be sent (maximum absorption) (page 31, column 3, lines 51-60).

It is desirable to connects an antenna to an infinite impedance in the event a "1" is to be sent, or connects said antenna to ground in the event a "0" is to be sent as taught by the NPL because it will maximize the signal to noise ratio.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the method of the NPL in the system of Ingram to improve the SNR ratio.

With respect to (b), Lewinter discloses a digital to analog convert that can convert a binary data stream to bipolar states of "+1s" and "-1s" (figure 2, column 2, lines 11-14).

It is desirable to convert a binary data stream to bipolar states of "+1s" and "-1s" because it reduces the potential for error (column 3, lines 9-11). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Lewinter in the system of Ingram and NPL to improve the accuracy of the system.

With respect to (c), in the same field of endeavor, Neagley discloses an impedance switch 14 that receives signal from voltage controlled squarewave oscillator and generates an impedance for open circuit or a matched load and connected to the antenna ground as shown in figure 1 (paragraph 0041), therefore, when the impedance switch is with an open circuit, the antenna reflect all of the received radio frequency signal (all energy re-radiated) and when the impedance is a matched load connected to the antenna ground (ANT GND), no energy is re-radiated from the antenna 10 because the received RF signal energy is split between the impedance of the antenna and the matched load, therefore, it provide a power splitting function; as a result, the impedance switch provide the function of selective connects an antenna to at least one power splitter, wherein the at least one power splitter selectively connects at least one

matched load to the antenna, and wherein the matched load is also connected to the ground.

It is desirable to have a switch receiving said multiplication for connecting an antenna to at least one power splitter, wherein the at least one power splitter selectively connects at least one matched load to the antenna, and wherein the matched load is also connected to the ground because it provide a condition that no energy is re-radiated from the antenna and thus improve the integrity of the transmitted signal and reduce noise. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Neagley in the apparatus of Ingram, NPL and Lewinter to improve the integrity of the transmitted signal and reduce noise.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SIU M. LEE whose telephone number is (571)270-1083. The examiner can normally be reached on Mon-Fri, 7:30-4:00 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Siu M Lee/
Examiner, Art Unit 2611
1/26/2010

/CHIEH M FAN/

Supervisory Patent Examiner, Art Unit 2611